



Ofcom Consultation:

Proposed measures to require compliance with international guidelines for limiting exposure to electromagnetic fields (EMF)

Brief by the Radio Society of Great Britain

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On 21 February Ofcom launched a consultation [1] proposing that all radio equipment (not just amateur radio) that can transmit at more than 10W (EIRP) be subject to a new licence condition for compliance with the International Commission for Non-Ionising Radiation Protection (ICNIRP) Guidelines for public exposure to electromagnetic fields. The proposals include a requirement to carry out and record assessments to show compliance using one or more of the following:

- Physical measurements
- Tests
- Calculations
- Following manufacturers' guidance/instructions

It is expected that most stations will be able to show compliance without having to make measurements. The RSGB is preparing a response to Ofcom and will be asking for members' comments on the details and regulations proposed. This briefing note explains what it means for amateurs.

Background: EMF exposure and amateur radio

The underlying requirement is to protect the public from exposure to EMF, which could damage health. Ofcom proposes that all Wireless Telegraphy Act (WTA) licences will contain a new and more rigorous clause (and associated guidance) to ensure radio equipment complies with EMF exposure guidelines.

This is not entirely new, as the current amateur licence conditions already require that we take safety precautions against RF radiation in line with Public Health England recommendations. As a responsible organisation we also have RF safety (including an awareness of ICNIRP) in our Exam Syllabus and may consider expanding this aspect further in due course.

The reference levels are given in the ICNIRP guidelines. Licensees will be required to keep records that demonstrate how they have complied with the ICNIRP guidelines. Ofcom refers to Table-7 of the current 1998 guidelines [2] which we note is different to the draft 2018 guidelines [3] that are about to be finalised. If you comply with 1998 guidelines, you will also comply with the 2018 guidelines. Similar requirements exist in the USA (since 1999) and Germany (since 2008).



The requirement is that power absorbed over time (30 minutes) is at a safe level. This means the simultaneous EMF for each of your radios (if more than one can be used at the same time) must be added together to show that the total EMF from the station is compliant. The ICNIRP Reference Levels are given as Electric Field (V/m), Magnetic Field (A/m) or Power Density (W/m²). Compliance with one of these limits is sufficient – you do not have to prove all three. Calculations account for the average duty cycle of a given transmission mode, which means different calculations are needed for SSB and digital transmissions.

The IARU has published a PC application, ICNIRPcalc, which calculates safe distances. This allows you to input maximum power, antenna type, feeder type / length and transmission mode. From that it calculates and gives you a safe distance according to the ICNIRP 1998 guidelines. If this distance is less than your nearest property boundary then you have shown compliance for the general public requirement. The IARU application can be downloaded from [4].

Will the RSGB assist in future with such a requirement?

Yes. The RSGB EMC Committee (EMCC) will be preparing a spreadsheet in which you can fill in the relevant parameters for each band you use. That would then give you individual safe distances and combined field strength at your closest boundary. This spreadsheet can be kept as a record that you have assessed your station. An online webpage version of this tool is also envisaged.

The EMCC will also be preparing and publishing a guidance note for those who might want to measure the levels. We recognise that difficulties can arise with direct measurements in the near field that can lead to widely varying results, and thus there is a need for a reliable means to derive field strengths.

What happens next?

The proposed changes will not be introduced until the end of 2020 at the earliest. The Ofcom consultation ends on 15 May 2020, after which Ofcom will release a policy statement and indicative timeline.

With respect to the consultation, we will prepare further guidance as well as our own response. We also encourage you to make a considered response to Ofcom to show your concerns.

Please contact John Rogers, M0JAV emc.chairman@rsgb.org.uk if you can help us prepare our own response, or if you need further advice.

References

- [1] Ofcom EMF Consultation: <https://www.ofcom.org.uk/consultations-and-statements/category-1/limiting-exposure-to-emf>
- [2] ICNIRP Guidelines 1998: <https://www.icnirp.org/cms/upload/publications/ICNIRPemfgdl.pdf>
- [3] ICNIRP Guidelines 2018 (Draft): <https://www.icnirp.org/en/activities/public-consultation/consultation-1.html>
- [4] IARU ICNIRPcalc tool: <https://www.iaru-r1.org/about-us/committees-and-working-groups/emc-committee-c7/links-to-emc-resources/>